

What is claimed is:

1. A support assembly for supporting a workpiece comprising:
a ceramic body having a first side and a second side adapted to support the workpiece;
a heating element disposed in the ceramic body;
a plate coupled to the ceramic body; and
a channel defined between the first side of the ceramic body and a first side of the plate.
2. The support assembly of claim 1, wherein the channel is at least partially defined in the ceramic body.
3. The support assembly of claim 1, wherein the channel is at least partially defined in the plate.
4. The support assembly of claim 1, wherein the channel further comprises:
a first portion having an orientation at least partially circumscribing a center axis of the support assembly; and
a second portion having plurality of radially extending passages.
5. The support assembly of claim 4, wherein the ceramic body further comprises:
a plurality of apertures disposed through the ceramic body between the first surface and the second surface and fluidly coupled to the radially extending passages.
6. The support assembly of claim 1, wherein the ceramic body further comprises:
a vacuum port disposed through the ceramic body.

7. The support assembly of claim 1, wherein the ceramic body further comprises:

a stepped surface disposed opposite the first side of the ceramic body.

8. The support assembly of claim 7, wherein the stepped surface further comprises:

a center portion, an intermediate portion and an outer portion, wherein a center portion extends farthest below the first side of the ceramic body.

9. The support assembly of claim 7, wherein the stepped surface further comprises:

a plurality of posts extending therefrom.

10. The support assembly of claim 1, wherein the plate is fabricated from at least one material selected from the group of consisting of aluminum nitride, aluminum oxide and aluminum.

11. The support assembly of claim 1, wherein the ceramic body is fabricated from at least one material selected from the group of consisting of aluminum nitride, aluminum oxide or doped ceramics such as alumina doped with titanium oxide or chromium oxide, doped aluminum oxide and doped boron-nitride.

12. The support assembly of claim 1 further comprising:

a ceramic stem connected to the body.

13. The support assembly of claim 12, wherein the stem is disposed through a hole in the plate.

14. The support assembly of claim 1, wherein the stem further comprises:

a means for retaining the plate in a position relative to the ceramic body.

15. The support assembly of claim 1 further comprising:
a plurality of fasteners coupling the plate to the ceramic body.
16. The support assembly of claim 1, where the plate further comprises:
a plurality of slots; and
a fastener disposed through at least one slot coupling the plate to the ceramic body.
17. The support assembly of claim 1 further comprising:
a means for releasably retaining the plate in a position relative to the ceramic body.
18. The support assembly of claim 17, wherein the means for retaining the plate is at least one retention device selected from the group consisting of a brazing material, an adhesive, a fastener, a lift pin guide mating threaded portions, a press fit or a bayonet fitting.
19. The support assembly of claim 18, wherein the means for retaining the plate further comprises:
a first flange coupled to the ceramic body; that interfaces with a flange in the plate.
20. The support assembly of claim 1 further comprising:
a ring supported by an end of the body and defining a plenum therewith;
and
a plurality of apertures formed through the body and fluidly communicating with the plenum.
21. The support assembly of claim 1, wherein the ceramic body further comprises:

a passage formed in and surrounded by the ceramic body, the passage having a first end and a second end both in fluid communication with the same surface of the support body, the first end disposed radially outward of the second end and in communication with the channel.

22. A support assembly for supporting a workpiece comprising:

a ceramic body having a first side and a second side adapted to support the workpiece;

a passage formed through the ceramic body having both a first end and a second end in fluid communication with the second side of the ceramic body;

a heating element disposed in the ceramic body;

a plate coupled to the ceramic body; and

a channel defined between the first side of the ceramic body and a first side of the plate, the channel in fluid communication with the second end of the passage.

23. The support assembly of claim 22, wherein the body further comprises:

a plurality of apertures formed through the body in fluid communication with the channel.

23. The support assembly of claim 22 further comprising a ring supported by the body and defining a plenum therewith, the plenum fluidly communicating with the apertures.

24. The support assembly of claim 21 further comprising:

at least one lift pin guide disposed through the body and plate, the lift pin having a tab extending radially therefrom, the plate retained by the tab to the body.

25. A support assembly for supporting a workpiece comprising:

a ceramic body having a first side and a second side adapted to support the workpiece;

a stem coupled to the first side of the plate;

a plate circumscribing the stem and disposed adjacent to the first side of the ceramic body; and

a channel defined between the first side of the ceramic body and a first side of the plate.

26. The support assembly of claim 25, wherein at least a portion of the channel is formed in at least one of the plate or the ceramic body.

27. The support assembly of claim 25, wherein the channel further comprises:

a first portion having an orientation at least partially circumscribing a center axis of the support assembly; and

a second portion having plurality of radially extending passages.

28. The support assembly of claim 27, wherein the ceramic body further comprises:

a plurality of apertures disposed through the ceramic body between the first surface and the second surface and fluidly coupled to the radially extending passages.

29. The support assembly of claim 25, wherein the stem further comprises:

a means for retaining the plate in a position relative to the ceramic body.

30. The support assembly of claim 25 further comprising:

a plurality of fasteners coupling the plate to the ceramic body.

31. The support assembly of claim 25, where the plate further comprises:

a plurality of slots; and
a fastener disposed through at least one slot coupling the plate to the ceramic body.

32. The support assembly of claim 25 further comprising:
a means for releasably retaining the plate in a position relative to the ceramic body.

33. The support assembly of claim 32, wherein the means for retaining the plate is at least one retention device selected from the group consisting of a brazing material, an adhesive, a fastener, a lift pin guide mating threaded portions, a press fit or a bayonet fitting.

34. The support assembly of claim 32, wherein the means for retaining the plate further comprises:
a first flange coupled to the ceramic body; that interfaces with a flange in the plate.

35. The support assembly of claim 25, wherein the ceramic body further comprises:

a passage formed in and surrounded by the ceramic body, the passage having a first end and a second end both in fluid communication with the same surface of the support body, the first end disposed radially outward of the second end and in communication with the channel.